



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,449	03/28/2005	Kazuyuki Yamane	4007561-173520	8257

23570 7590 11/19/2009
PORTER WRIGHT MORRIS & ARTHUR, LLP
INTELLECTUAL PROPERTY GROUP
41 SOUTH HIGH STREET
28TH FLOOR
COLUMBUS, OH 43215

EXAMINER

TOSCANO, ALICIA

ART UNIT	PAPER NUMBER
----------	--------------

1796

MAIL DATE	DELIVERY MODE
-----------	---------------

11/19/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/529,449	Applicant(s) YAMANE ET AL.	
	Examiner Alicia M. Toscano	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11, 26 and 28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11, 26, 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Declaration under 1.132

1. Applicant's declaration is not persuasive. Applicant has shown that one expects a linear relationship between viscosity and molecular weight, a facet the Examiner generally agrees with. The Examiner does not, however, agree that the same linear relationship would exist between the same polymer MW/concentrations and different solvent/temperature systems. Given Applicant's data set measuring the viscosity in dimethyl sulfoxide and hexafluoroisopropanol at 25C, Applicant argues that the 0.09 change in viscosity of PGA measured in trichlorophenol/phenol at 30C in Matsumoto relates to only a 14,000 MW increase in Matsumoto. Applicant thusly argues that this small change does not meet the chain lengthening of the claims.

The Examiner disagrees. One cannot take the viscosity at a one temperature and solvent and super-impose it onto a data set at a second temperature and solvent and drawn any conclusions therein on the resulting MW. As such Applicant's data is not persuasive. Further, even if said data were commensurate, a 14,000 MW increase must be due to some chain lengthening since (1) the 14,000 MW is an average therein and (2) Matsumoto meets Applicant's claimed method. Applicant's claims only require 1 such polymer to be chain lengthened, and as such it would be the Examiner's position that 1 polymer chain therein must be chain lengthened to an extent to meet that of Applicant's claims.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Rejection over Claims 1, 10 and 30-31 under 35 U.S.C. 102(b) as being anticipated by Matsumoto (JP 2001/323056) is overcome by amendment, Applicant has cancelled the above claims.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Rejection over Claims 1, 10, 30 and 31 under 35 U.S.C. 103(a) as being unpatentable over Shinoda (US 5247013) is overcome by amendment, Applicant has cancelled the above claims.

4. Claims 11, 18, 23, 24, 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto.

Elements of this rejection are as set forth in the action dated 6/2/09 reiterated below in its entirety. Claims 18, 23 and 25 are removed from the rejection since they have been cancelled by amendment. See remarks below.

Matsumoto discloses aliphatic polyesters. Said polyesters are the reaction product of polylactic acid and an oxazoline (abstract). The polylactic acid may be produced from the ring opening polymerization of a cyclic dimer [0010]. Polyglycolic

Art Unit: 1796

acid may be used [0009]. The oxazoline compound may be 2,2'-diphenylene bis(2-oxazoline) [0014], [0021] and examples. The oxazoline is reacted at a temperature of around 220C [0036]. The molecular weight of the polylactic acid, before reaction with oxazoline, is from 50,000 to 300,000 [0010]. When polyglycolic acid is used it is the Examiner's position that one would use the same MW as taught for use for the polylactic acid, since Matsumoto teaches the polymers as functional equivalents. Matsumoto discloses the use of the oxazoline to terminate the carboxyl end groups of the polylactic acid, however, it is the Examiners position that use of the bis(2-oxazoline) inherently crosslinks, or chain extends, via reaction between two neighboring polylactic acid end groups since this is the same reaction composition and method used by Applicant. Since the oxazoline will inherently bond two ends of neighboring polylactic acid chains the Examiner finds the increase in molecular weight to be inherent in the reaction of Matsumoto. Matsumoto discloses in Ex 6 the use of 2.02 parts by weight oxazoline, or 2.02 wt%, meeting the wt% requirements of the above claims.

It is the Examiners position that a MW ratio, the property requirements of T2-T1, a PDI of 1.9 and an end MW of 150,000 would be inherent in the composition.

Matsumoto does not disclose a reaction time of between 10 and 30 minutes, as required by Claim 11. As set forth in the arguments dated 6/2/09, generally, the higher the reaction temperature the shorter the reaction time, however it is unclear to the Examiner what a reasonable reaction time would be. The reaction would not be instantaneous and residence times within the 10-30 minutes claimed by Applicant's

Art Unit: 1796

would not be unrealistic. As such a prima facie case of obviousness exists for the claimed range.

Matsumoto discloses in Ex 6 the use of 2.02 parts by weight oxazoline, or 2.02 wt%, meeting the wt% requirements of the above claims. Since the composition elements and processing conditions are met as previously set forth the properties, chain lengthening, end MW, PDI and (T2-T1) difference therein are found inherent.

Regarding the temperature limitation of not lower than the melting temperature but no higher than 240C: Matsumoto exemplifies the use of PLA (polylactic acid) and PGA (polyglycolic acid). Matsumoto discloses a reaction temperature of 220C when using PLA and 270C when using PGA. The melting point of PGA is 224C and the melting point of PLA is 176C. As such Matsumoto is using a reaction temperature, in both instances, of about 45 degrees higher than the melting point, which does not anticipate the claimed temperature range. However, since the polymers are in the melted state it is the Examiner's position that the degree of heating above melting point does not affect the polymers reactivity (i.e. one could pick any temperature within reason above the melting temperature but below that which the polymer would degrade or burn), and the chosen temperature above the melting point is a result effective variable, increasing the temperature decreases the melt viscosity, and vice versa. Further, the reaction between the oxazoline and polymer would also be affected by the temperature, wherein a faster reaction time would be expected as one increases the temperature, and vice versa.

As such the Examiner finds that a prima facie case of obviousness exists to optimize the temperature depending on the viscosity and reaction time desired, meeting the temperature requirements of the claims.

Remarks:

Applicant argues Matsumoto indicates that the polymerization does not progress by adding the oxazoline compound and Matsumoto does not teach or suggest further enhancing the polymerization degree. Applicant argues [0018] discloses Matsumoto does not desired unreacted low molecular weight oxazoline compounds in the composition. Applicant argues it is difficult to provide a comparison of Matsumoto because Matsumoto does not disclose important details of the process exemplified therein, particularly, Matsumoto does not disclose the shearing force nor the reaction time and as such one would not be able to obtain his end product with out excessive trial and error. Applicant argues the reduced pressure used by Matsumoto is not disclosed. Applicant argues there is only one example of a temperature used in the reaction with PGA and this does not meet the requirements of the instant claims. Applicant argues the Examiner's position that once a polymer is melted the temperature used above the melting temperature would not affect the polymer reactivity and the Examiner's position that the reaction temperature is a result effective variable are conflicting. Applicant argues these positions are not supported by any evidence. Applicant argues Masumoto does not disclose that the reaction temperature is a result effective variable. Applicant argues there is no disclosure of any desire to optimize the

Art Unit: 1796

temperature. Applicant argues the reaction time is not met by the reference and the Examiner's position to tailor such based on desired crosslink density is improper. Applicant argues the MW before or after end capping is not disclosed and one of ordinary skill would not expect a significant MW increase. Applicant argues there is no evidence of record that polylactic acid and polyglycolic acid are equivalent. Applicant argues the MW's disclosed by Matsumoto are specific to polylactic acid as evidenced by the large difference in viscosity of polylactic acid and polyglycolic acid in the Examples of Matsumoto. Applicant argues the MW taught to be used by Matsumoto is the beginning MW and the end MW is not disclosed therein. Applicant argues there is no reason why one of ordinary skill would chain lengthen the composition of Matsumoto.

The Examiner disagrees. The process of Matsumoto and Applicant are strikingly similar. Matsumoto uses the same polymers and the same bi-functional oxazoline compound in the same weight percentages disclosed in the claims and specification. It is unclear why a chain lengthening reaction would not inherently occur. Applicant's various arguments that process details are not sufficient in Matsumoto to recreate his invention are not persuasive since the shearing force or reduced pressure should not greatly affect the end product (Applicant may, however give evidence to the contrary). Further, since the polymerization occurs until the oxazoline has been consumed [0018], Applicant may recreate the invention to the Examiner's satisfaction by reacting the composition until the oxazoline is consumed. Applicant's reaction time may only be 10 minutes, so a data point at 3 minutes and 6 minutes would be sufficient to show that at earlier times the oxazoline is consumed yet not chain extended to any

Art Unit: 1796

degree (since Applicant's claim only requires one chain lengthened product). As such the Examiner is not convinced of the burden of recreating a sufficient Example of Matsumoto and showing the difference in reaction time required. Further, arguments drawn to the temperature are not convincing. As set forth previously, once a polymer is melted, it is melted. Any increase in temperature is not going to affect the polymer unless it is so high that it degrades the polymer. The additional statements regarding increasing temperature and decreasing reaction time are based on the reaction of the oxazoline compound with the acid groups of the polymer. Generally, increasing temperature decreases the reaction time between two elements. The Examiner's positions are proper and Applicant's arguments therein are not persuasive. As such positions to optimize the temperature are found proper and are found to be generally accepted in the art. If Applicant disagrees with such positions Applicant may submit evidence to the contrary. The Examiner has modified the motivation for tailoring the reaction time based on the positions set forth previously, as such arguments therein are found moot. That the MW before and after end capping is not disclosed is not persuasive since the start MW is disclosed and since the process and composition requirements are met. Since the process and composition requirements are met the burden is on the Applicant to show that the chain lengthening is not inherent. Matsumoto discloses that polylactic acid and polyglycolic acid may both be used. As such Matsumoto is disclosing that both polymers function equivalently in his invention. Arguments therein are moot. That there are large viscosity differences between polylactic acid and polyglycolic acid is not convincing since both polymers are disclosed

Art Unit: 1796

to be used. It is unclear to the Examiner what other molecular weight Matsumoto may be using when he uses PGA in the Examples. Why would he be using a MW outside that taught in the reference for polylactic acid? Applicant may submit evidence to the contrary however since Matsumoto discloses a MW of polylactic acid and since he teaches, and exemplifies, PGA it is the Examiner's position one would use the MW of Matsumoto. The chain lengthening reaction must be inherent in the composition/process of Matsumoto for the reasons set forth above and as such the rejection stands as previously set forth.

Further regarding the properties the Examiner has deemed inherent: if there is any difference between the above composition and the composition of the instant claims the difference would have been minor and obvious. "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. See MPEP 2112.01(I) , *In re Best*, 562 F2d at 1255, 195 USPQ at 433, *Titanium Metals Corp v Banner*, 778 F2d 775, 227 USPQ 773 (Fed Cir 1985), *In re Ludtke*, 441 F2d 660, 169 USPQ 563 (CCPA 1971) and *Northam Warren Corp v D F Newfield Co*, 7 F Supp 773, 22 USPQ 313 (EDNY 1934).

5. Claims 11, 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonsignore in view of Matsumoto.

Elements of this rejection is as set forth in the action dated 6/2/08 reiterated below in its entirety. Claims 1, 10, 18, 23 and 24 are removed since they are newly cancelled by amendment. See remarks below.

Bonsignore discloses the production of high molecular weight polylactic acid or polyglycolic acid. Bonsignore discloses that since relatively small amounts of polylactic acid are used in industry it is very expensive to obtain large MW polylactic acid with high purity and discloses reacting the carboxyl end groups of the polylactic acid with bis-oxazoline (abstract) is a way to obtain the desired purity and MW less expensively (Column 2 lines 14-19). The polylactic acid or polyglycolic acid may be produced by the ring opening polymerization of dilactones (Column 3 Lines 62-65). The molecular weight of the polylactic acid before the reaction is 2,000-15,000 (Column 1 Line 17). The molecular weight after reaction with a bis-oxazoline is 50,000-100,000 (Column 6 Lines 26-28).

Bonsignore does not disclose the use of an end MW of greater than 181K or the use of at least 30,000 MW PGA as a starting material as required by Claim 11.

Matsumoto includes elements as set forth above. Matsumoto discloses the use of a polylactic acid of MW between 100k and 300k because when the MW is within this range the physical properties, such as strength, are excelled [0010].

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Bonsignore the use of a MW of 50,000 to 400,000, as taught by Matsumoto, in order to create articles with superior physical properties.

The start range of at least 30,000 and the end range of at least 150,000 lies within this range.

The polydispersity of polymer compositions is high unless specific conditions are met to yield a low PDI. Since the reaction conditions of the polylactic acid has been met the Examiner finds the PDI of at least 1.9 to be inherent in the composition of Bonsignore. As the composition requirements have been met the Examiner finds the properties of the claims to be inherent.

Bonsignore does not include the use of a specific bis-oxazoline nor the amount of bis-oxazoline useful to create high molecular weight polylactic acid.

Matsumoto discloses the use of 0.5-2 wt% 2,2'-m-phenylene bis(2-oxazoline) [0021], Examples, Table 1. 2,2'-m-phenylene bis(2-oxazoline) is preferred because of its stability with the polyester resin [0021], and the amount used is preferred so as to minimize the amount of unreacted bis-oxazoline in the composition [0021].

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Bonsignore the use of 0.5-2 wt% of 2,2'-m-phenylene bis(2-oxazoline), as taught by Matsumoto, since this amount of said species is taught to have superior stability in the resin and this would thusly lead to a superior end product, further meeting the requirements of claims 11 and 28.

Bonsignore does not disclose the reaction time. The time of reaction will dictate the crosslink density and thus the molecular weight of the polylactic-co-oxazoline product. The molecular weight of the polylactic acid dictates the overall properties of the resin. Higher molecular weight will yield better strength and mechanical properties than

Art Unit: 1796

low molecular weight polymer however too high of a molecular weight will lead to difficulties with molding.

It would have been obvious to one of ordinary skill in the art at the time of the invention to tailor the reaction time of Bonsignore in order to achieve the desired crosslink density, or molecular weight, of the polylactic acid in order to create articles with superior molding properties.

Additionally, as set forth in the arguments dated 6/2/09, generally, the higher the reaction temperature the shorter the reaction time, however it is unclear to the Examiner what a reasonable reaction time would be. The reaction would not be instantaneous and residence times within the 10-30 minutes claimed by Applicant's would not be unrealistic. As such a prima facie case of obviousness exists for the claimed range.

As the compositional requirements are met the Examiner finds the MW increase and further properties such as PDI, T2-T1 difference and weight loss starting temperature required by the Claims to be inherent.

Regarding the temperature limitation of not lower than the melting temperature but no higher than 240C of claim 11 and its dependants: Bonsignore discloses that either polylactic acid or polyglycolic acid may be used. Bonsignore recognizes that PLA has a melting point of about 175 whereas PGA has a melting point of about 230 (Column 4 lines 26-34). Bonsignore discloses solution polymerization in the Examples, Bonsignore does not disclose melt polymerization.

Art Unit: 1796

Matsumoto includes elements as set forth above. Matsumoto discloses melt polymerization as a suitable reaction process for the same reaction taught in Bonsignore.

The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945), a prima facie case of obviousness exists to use the process of Matsumoto to react the polymers of Bonsignore, since the process is taught to be suitable for such. Since the polymers in Matsumoto are in the melted state it is the Examiner's position that the degree of heating above melting point does not affect the polymers reactivity (i.e. one could pick any temperature within reason above the melting temperature but below that which the polymer would degrade or burn), and the chosen temperature above the melting point is a result effective variable, increasing the temperature decreases the melt viscosity, and vice versa. Further, the reaction would also be affected by the temperature, wherein a faster reaction time would be expected as one increases the temperature, and vice versa.

As such the Examiner finds that a prima facie case of obviousness exists to optimize the temperature depending on the viscosity and reaction time desired, meeting the temperature requirements of the claims.

Remarks:

Applicant argues Bonsignore provides no basis to apply his teachings to polyglycolic acid and Bosginore provides no teachings for the process of producing a polymer having a MW of at least 181,000. Applicant argues Bosignore does not disclose the reaction parameters of claim 11 and the Examples of Bonsignore do not meet the requirements of the claims. Applicant argues the Examiner's statements that the degree of heating does not affect the polymer's reactivity and that the chosen temperature is a result effective variable are conflicting and not supported by evidence. Applicant argues Matsumoto teaches end capping and one of ordinary skill would have no reason to combine Matsumoto and Bonsignore, and such a combination does not meet the process requirements of the claims.

The Examiner disagrees. Bonsignore teaches that either polylactic acid or polyglycolic acid may be used. The use of higher MW is taught by combination with Matsumoto since Matsumoto teaches that higher MW gives products with superior physical properties. Bonsignore teaches chain lengthening with oxazoline compounds. Since the beginning MW requirements are met and the process requirements are met, and chain lengthening is desired, the end MW is found to be met by Bonsignore and Matsumoto when one starts with the MW's taught by Matsumoto. Arguments therein are not persuasive. Bosignore does not exemplify the process with oxazoline, so that the Examples do not meet the requirements of the claims is not found persuasive. The process requirements are found to be an obvious variable and are met as set forth above. As such arguments therein are not found persuasive. As set forth above the Examiner's statements are not conflicting (i.e. once a polymer is melted, it is melted).

Art Unit: 1796

Any increase in temperature is not going to affect the polymer unless it is so high that it degrades the polymer. The additional statements regarding increasing temperature and decreasing reaction time are based on the reaction of the oxazoline compound with the acid groups of the polymer. Generally, increasing temperature decreases the reaction time between two elements). Without evidence to the contrary, Applicant's arguments therein are not persuasive. Matsumoto and Bonsignore are drawn to similar reactions. As such the references are found to be analogous. The process requirements are met as set forth above and as such Applicant's arguments are not found persuasive and the rejection stands as set forth above.

Further regarding the properties the Examiner has deemed inherent: if there is any difference between the above composition and the composition of the instant claims the difference would have been minor and obvious. "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. See MPEP 2112.01(I) , *In re Best*, 562 F2d at 1255, 195 USPQ at 433, *Titanium Metals Corp v Banner*, 778 F2d 775, 227 USPQ 773 (Fed Cir 1985), *In re Ludtke*, 441 F2d 660, 169 USPQ 563 (CCPA 1971) and *Northam Warren Corp v D F Newfield Co*, 7 F Supp 773, 22 USPQ 313 (EDNY 1934).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia M. Toscano whose telephone number is (571)272-2451. The examiner can normally be reached on M-F 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1796

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AMT

/Randy Gulakowski/

Supervisory Patent Examiner, Art Unit 1796